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M U D P I E no. 11

Museum and University Data, Program and Information Exchange

MUSEUM COMPUTER NETWORK

A workshop on data collection and data dissemination in museums was held at the Metropolitan Museum of Art, June 5, 1970. It was sponsored by New York University in cooperation with the Museum Computer Network, under a grant from I.B.M. The morning schedule included a summary by David Vance, Museum of Modern Art, of the current activities of the Museum Computer Network; a talk by R. G. Chenhall, Arkansas Archeological Survey, on methods used in the Arkansas Archeological Survey (they are using the MCN system); and a talk by John Cutbill, Cambridge University, England, concerning IRGMA (Information Retrieval Group of the Museum's Association) in England, which is an interdisciplinary organization attempting to design a mutually compatible and logically pure communications format. The afternoon was devoted to seminar groups focused on various aspects of data collection and dissemination, followed by a general discussion of the seminars.

The Museum Computer Network is composed of about 23 institutions, most of which are in the New York City area. The basic aim behind the organization of the Network was to provide a mutual data bank of art, archeological, and other museum catalogue records that would be available to all. At the present time only two museums are actively engaged in data storage. The Metropolitan and the Museum of Modern Art both have remote terminals used for data input to the disc at a time-share contracter (Bowne Time Sharing). After the data are listed, checked, edited, and approved, the disc is read onto magnetic tapes and the tapes are sent to the Computer Center at SUNY, Stony Brook, where they are merged with previous disc files and stored pending retrieval calls.

At the present time, although extensive records are prepared, the software is not yet written to permit manipulation of the data in all desired ways. I had the impression that at present they could arrange the data by any of the following five categories: artist, title of object, medium, museum where located, and museum accession number. Any listing at the present time prints the entire file arranged by one of these categories, and it is not possible at the present time to restrict a read-out to "all water colors by Picasso," for instance. Vance indicated that they were hoping to get additional software written in the near future to permit selective retrieval and better manipulation of existing data.

There were two computations of costs of data input. Jack Heller, of the SUNY Stony Brook Computer Center, indicated that the cost per record, which would be equivalent to the catalogue entry for a single specimen for natural history material, averages out to about one dollar. At this rate, to store all catalogue data on the reptile and amphibian collections in the USNM would cost slightly more than $200,000, and for all reptile and amphibian collections in the United States, a little more than a million dollars. A second estimate,

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by Vance, was that overall costs came to about 2.5 mills per character--which would probably be a more accurate figure on which to base estimates of cost, because it takes into account the variability in the length possible from one record the next.

The following items were distributed to attendees at the workshop. Mrs. Ruth Bowman, 139 East 63rd Street, New York, New York 10021, has indicated that they would be distributed upon request as long as the supply lasts:

Anon. Building a Collection Data Bank at Museum Computer Network. IBM Application Brief, 1970, 8 pp. A summary of the Network's activities to data.

Vance, David. Structure and Content of a Museum Data Bank. Mimeo, 1970, 26 pp. Summary of what is to be contained in the proposed data bank, with lists of descriptors, the museums involved, and "annotation classes".

Heller, Jack. Permuted Indexes and Catalog Cards Constructed from the Museum Computer Network's Data Bank. 1970, 4 pp. Several examples of output from the bank.

COMPUTERS IN MUSEUMS

The results of the first conference on "Computers and Their Potential Applications in Museums," held in New York City, April, 1968, have been published by the Metropolitan Museum, under the same title. The work is divided into five parts, entitled as follows: Documentary Applications (5 papers), Stylistic Analysis by Computer (5 papers), Visual Applications (4 papers), Computerized Museum Networks (2 papers), and New Approaches in Museum Education (4 papers). Anyone interested in computer use in museums should look at it.

SECOND CRAM-COURSE IN TIME-SHARE COMPUTING

A surprising turnout of 18 people showed up for the second cram-course in time-share computing, held at the Smithsonian on July 3-4, 1970. It seems likely that this is too large a group to permit successful achievement of programming understanding, and only a few survived to attempt programming on the second day (the fact that it was the Fourth of July, 1970, in Washington, D. C., may have influenced the second day turnout, of course). If nothing else, however, a big group of people took their first steps toward utilization of time-shared computers.

PROGRAMS AVAILABLE FROM UNIVERSITY OF KANSAS

In MUDPIE #10 we listed some of the very recent computer contributions of the State Geological Survey of Kansas. In response, Dr. Daniel F. Merriam sent a complete listing of their publications to date. It is too extensive for inclusion here, but Dr. Merriam will send the list to interested people. Address him at State Geological Survey, University of Kansas, Lawrence, Kansas, 66044.

COMPUTER-FORMED SYSTEMATIC KEYS

A. V. Hall, Bolus Herbarium, University of Cape Town, Rondebush, S. Africa, has written a program in MAC (Manchester Automatic Code) for an I.C.L. 1301 Computer that will search a data matrix to select a sequence of appropriate characters to form a dichotomous key. The program will shortly be re-written in Fortran IV for an IBM 1130. Hall's techniques for evaluation and selection of characters for the sequence, as well as a detailed analysis of the steps in the program, are described in Taxon, vol. 19, 1970, pp. 12-19.

PLANT DISEASE IDENTIFICATION PROGRAM

Drs. A. L. Jones and S. B. Harsh, Plant Pathology Department, Michigan State University, East Lansing, have developed a program for the identification of plant diseases, using the FORTRAN program by L. Morse (MUDPIE #9, p.3) to permit identification of plant diseases by touch telephone and a time-shared computer. All response by the central computer is by voice transmission, including the final identification of the disease, so the system can be used anyplace in the state of Michigan where one has access to a touch-tone telephone. Input from the user of the program is from the touch-tone system, and the computer is able to translate the numbers touched into symbols for the various parameters of disease symptoms observed in the field. Although the system is still experimental, it is in use by 14 extension agents around the state, and over 1000 analyses have been run to date. Figures on the percentage of success in that 1000 were not available, unfortunately, although they would not be too significant, because the 14 agents engaging in the experiment are already completely competent in plant disease identification, and they are simply using the system to test its usefulness.

RECENT LITERATURE

Cheetham, A. H. Morphology and systematics of the bryozoan genus Metrarabdotus. Smithsonian Miscellaneous Collections, 151, 1968, pp. 1-121. [Numerical taxonomy in invertebrate paleontology.]

Eades, D. C. Theoretical and procedural aspects of numerical phyletics. Systematic Zoology, 19, 1970, 142-171.

Duke, J. A. On tropical tree seedlings I. Seeds, seedlings systems, and systematics. Annals of the Missouri Botanical Gardens, 56, 1969, pp. 125-161.

Farris, J. S., A. G. Kluge, and M. J. Eckardt. A numerical approach to phylogenetic systematics. Systematic Zoology, 19, 1970, 172-189.

Flores, Ivan. Computer Sorting. Prentice-Hall, New Jersey, 1969, x + 237.

Hansen, Bertil and Knud Rahn. Determination of angiosperm families by means of a punched-card system. Dansk Botanisk Arkiv, Band 26, Nr. 1, 1969, pp. 1-44, 172 punched cards.

Kikkawa, J. and K. Pearse. Geographical distribution of land birds in Australia--a numerical analysis. Australian Journal of Zoology, 17, 1969, pp. 821-840.

Moss, W. W. and W. A. Webster. A numerical taxonomic study of a group of selected Strongylates (Nematoda). Systematic Zoology, 18, 1969, pp. 425-443.

---------- Phenetics and numerical taxonomy applied to systematic nematology. Journal of Nematology, 2, 1970, 16-25.

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